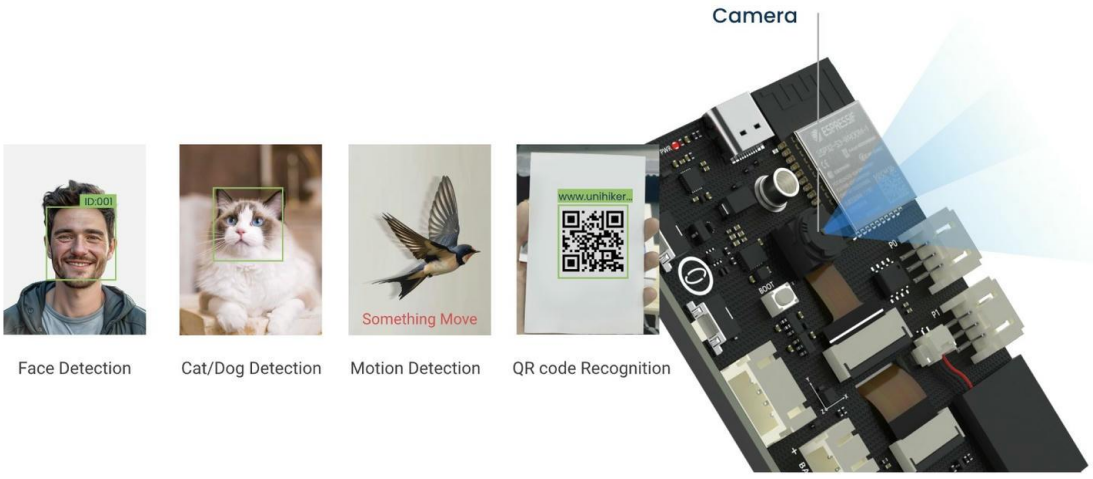
## Introduction

The UNIHIKER K10 AI coding board is designed for K12 STEM education and beginners, combining **vision AI, voice control, and TinyML machine learning** in one compact device. This AI learning coding board features a 2.8-inch color display, dual wireless connectivity (Wi-Fi/Bluetooth), and a comprehensive sensor suite including a 2MP camera, microphone, speaker, RGB light, plus environmental detectors for temperature, humidity, light, and motion. With its edge connectors and Gravity IO interfaces, users can easily connect and control various digital/analog sensors, I2C/UART actuators, and other peripherals, creating complete IoT solutions without requiring additional hardware.

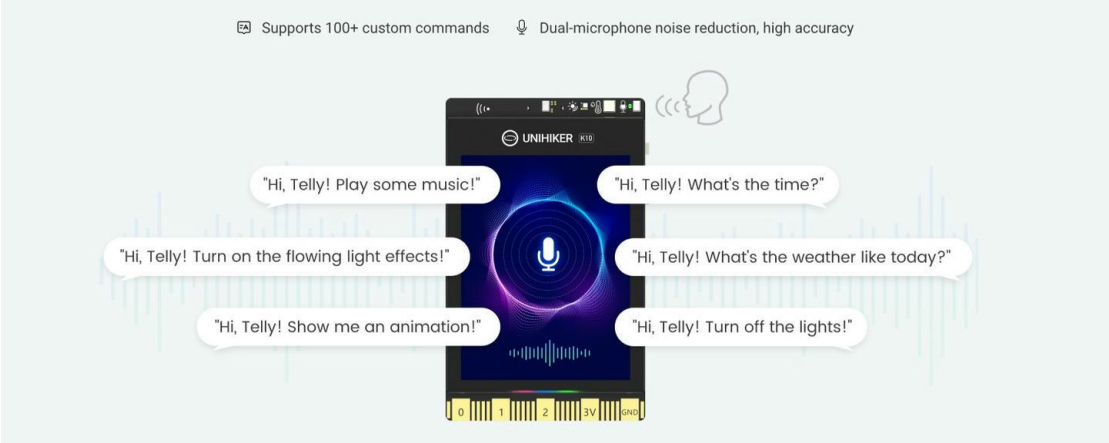

## 4 Pre-Loaded Vision AI Models for Beginner Projects

Ideal for first-time AI exploration, the UNIHIKER K10 board comes with four ready-to-use vision models: **Face Detection, Pet Recognition (Cat/Dog), QR Code Scanning, and Motion Sensing**. The integrated 2MP camera allows beginners to immediately create security systems, interactive displays, and smart monitoring projects - no prior programming experience needed.



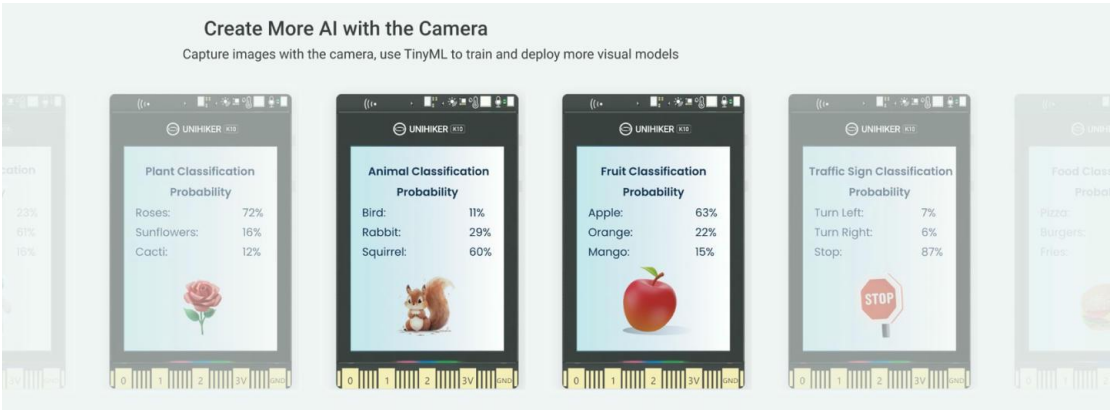

### Supports Offline Speech Recognition

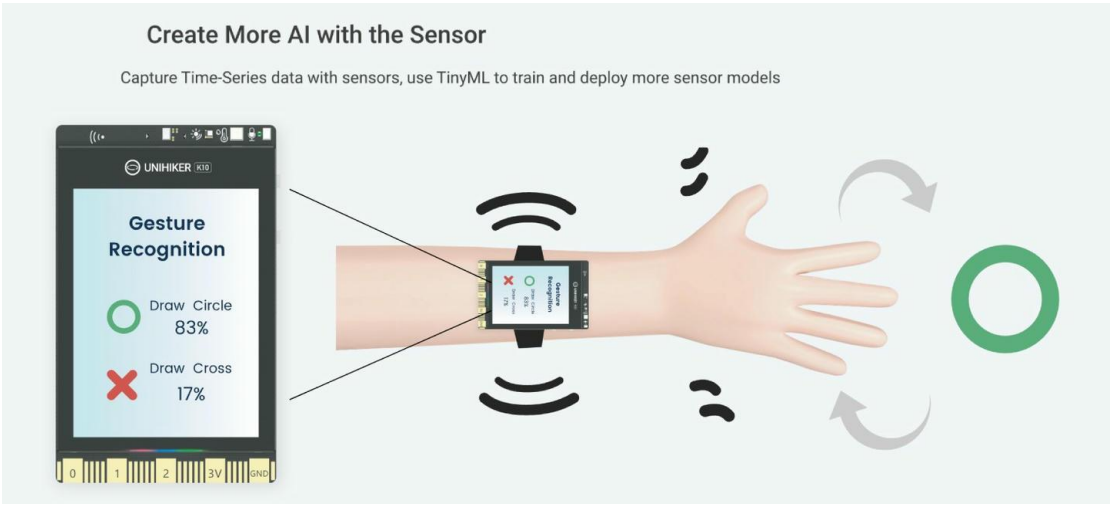
Equipped with a built-in microphone and pre-installed voice models, the UNIHIKER K10 supports offline speech recognition. This enables users to create voice-activated applications, such as custom voice commands and interactive AI systems, without requiring an internet connection.




### Not Just Built-in Models

The UNIHIKER K10 supports TinyML, allowing users to train their own custom vision and sensor models. With the ability to develop personalized AI models for specific tasks, users can explore deeper AI applications and tailor the board's functionality to their unique projects. Whether working with image recognition, sensor data, or other AI-based tasks, TinyML offers the flexibility to push the boundaries of the board's capabilities.




## Combine BT & Wi-Fi with AI to Create More Possibilities

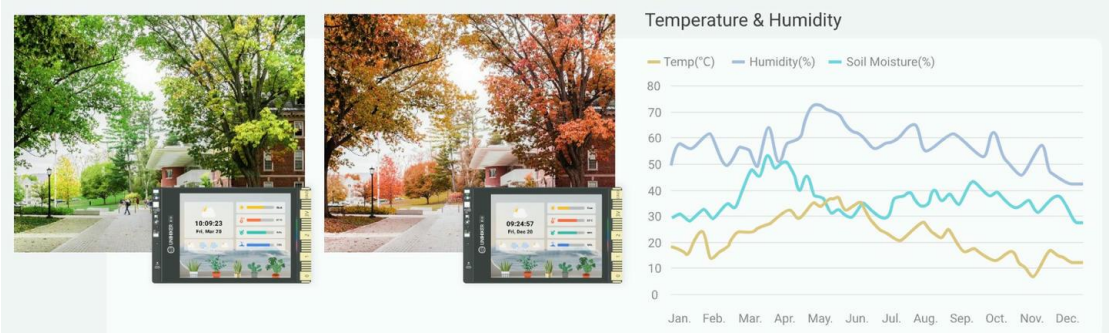
By combining Bluetooth 5.0 and Wi-Fi 2.4G with onboard AI functionality, the UNIHIKER K10 offers extensive connectivity options for creating more interactive and data-driven applications. Whether building IoT systems, remote control applications, or data transmission projects, the UNIHIKER K10 provides seamless integration of AI with wireless communication protocols.


## Support the Internet of Things

The UNIHIKER K10 is designed with IoT applications in mind. It supports long-term data

collection and remote monitoring, making it ideal for projects that require continuous data recording and analysis. With its rich set of sensors (temperature, humidity, light, accelerometer) and connectivity options (Wi-Fi, Bluetooth), users can easily integrate the UNIHIKER K10 into IoT ecosystems for real-time monitoring, remote device control, and data-driven applications.

Pair it with the Gravity: BME688 AI Environmental Sensor (VOC, Temperature, Humidity, Pressure) to create advanced air quality monitoring projects.

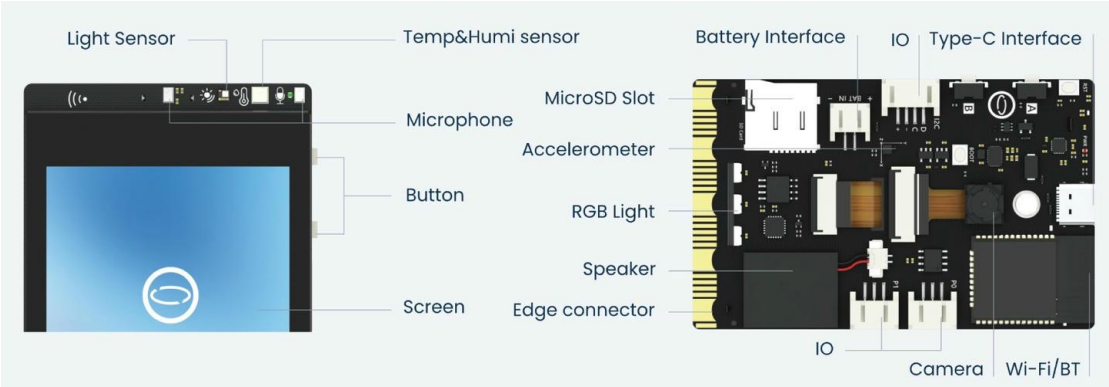



**Built-in 2.8-inch Color Screen for Data Visualization**

The UNIHIKER K10 features a 2.8-inch color screen that enables users to visualize real-time data from sensors, AI models, and projects. This screen is ideal for displaying sensor readings, AI outputs, and project results directly on the board, providing immediate feedback.


**Rich Interfaces and High Expandability**

With an array of I/O ports, including USB Type-C, MicroSD, Gravity 3pin/4pin, and edge connectors, the UNIHIKER K10 offers rich expandability for connecting additional sensors, actuators, and accessories.




### Supports Graphical and MicroPython Programming

The UNIHIKER K10 supports both graphical programming and MicroPython, catering to users at different skill levels. It is also compatible with Mind+, a drag-and-drop programming tool that simplifies coding with blocks. The graphical programming interface allows beginners to quickly build projects without needing to write code, while MicroPython offers a more advanced programming environment for experienced developers.

The tool also offers a variety of sample projects to help users get started, such as:

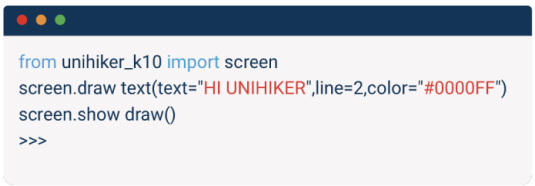
AI face detection

QR code scanning

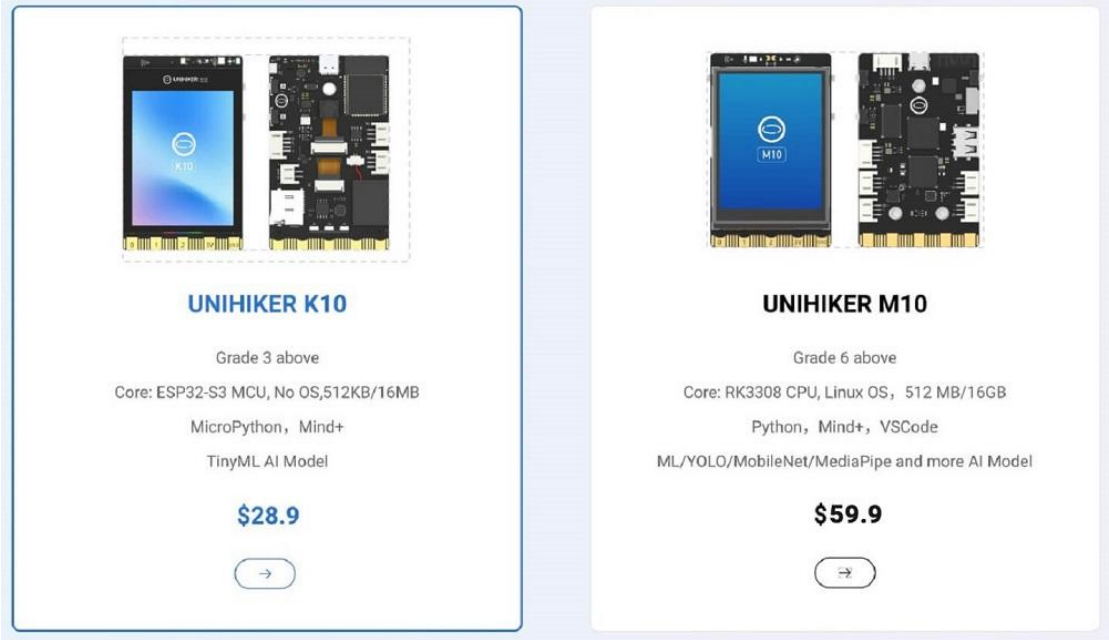
sensor control

For more hands-on tutorials, visit the Examples link to explore a wide range of projects.

Download Mind+ to get started: Mind+ Download.


### UNIHIKER Selection Guide




Video: Introduction and Feature Demonstration of UNIHIKER K10

**Applications**

AI Learning

Machine Learning

Face detection

Speech recognition

**Specification**

MCU: ESP32-S3 Xtensa LX7

SRAM: 512KB

Flash: 16MB

Wi-Fi: 2.4G

BT: Bluetooth 5.0

Screen: 2.8 inch, 240x320

Camera: 2MP

Sensor: Button, Microphone, Temperature Sensor, Humidity Sensor, Light Sensor, Accelerometer Sensor

Actuator: RGB Lights, Speaker

Pre-Installed AI models:

- Face Detection
- Image Recognition
- Cat/Dog Detection
- QR Code Recognition
- Motion Detection
- Local Speech Recognition
- Custom Voice Commands

Port: USB Type-C, MicroSD, Gravity 3pin&4pin port, 2pin ph2.0 battery port, Edge connector

Power: USB Type-C, Battery Port, Edge Connector

Size: 51.6mmx83mmx11mm

**Documents**

Product wiki

Getting Started

Tutorial - Getting Started with MindPlus graphical programming Software

Examples

MindPlus Blocks Reference

Hardware Reference

FAQ

**Shipping List**

UNIHIKER K10 x1

Type-C USB cable x1